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09/180,432	02/12/1999	FUMIKAZU MACHINO	981361	6772

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EXAMINER

RUDDOCK, ULA CORINNA

ART UNIT	PAPER NUMBER
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1771

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31

Please find below and/or attached an Office communication concerning this application or proceeding.



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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 31

MAILED  
DEC 17 2002  
GROUP 1700

Application Number: 09/180,432

Filing Date: February 12, 1999

Appellant(s): Fumikazu MACHINO et al.

\_\_\_\_\_  
Daniel A. Geselowitz  
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 25, 2002.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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**(3) Status of Claims**

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-10 and 15-42.

Claims 11, 12, and 43 are allowed.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: the 112, 1st paragraph and 2nd paragraph rejections are overcome. Therefore, the issue that remains is whether claims 1-10 and 15-42 are unpatentable under 35 U.S.C. 103(a) over McCullough, Jr. et al. (US 4,997,716) in view of Otani et al. (US 4,504,455).

**(7) Grouping of Claims**

A statement that claims 1-9 and 15-41 stand or fall together as group I is present in the Appellant's brief. A statement that claims 10 and 42 stand or fall together as group II is present in the Appellant's brief. A statement that claims 11, 12, and 43 stand or fall together as group III is present in the Appellant's brief.

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**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

4,504,455	OTANI et al.	3-1985
4,997,716	McCULLOUGH, Jr. et al.	3-1991

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-10 and 15-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough, Jr. et al. in view of Otani et al. (US 4,504,455). McCullough, Jr. et al. teach a fire retarding and fire shielding structural panel for a vehicle, comprising a composite composed of a thermosetting resin matrix containing a multiplicity of non-flammable carbonaceous fibers (abstract). Thermosetting resin include phenolic resins and melamine resins (col 3, ln 6-9). The length of the individual fibers are in the range of 0.5 to 20 mm and the diameter of the carbon fibers of the invention range from 2 to 25 microns (col 4, ln 20-28). The bulk densities of the batting range from 0.4 to 6 lbs/ft<sup>3</sup> (6.4 to 96 kg/m<sup>3</sup>). McCullough's carbonaceous fibers are prepared by the method as shown by U.S. patent application Ser. No. 06/856,305 (col 2, ln 45-55). In 06/856,305, McCullough teaches carbonizing the fibers at a temperature between 600°C and 700°C. It is also conventional in the art to carbonize fibers at temperatures between 600°C and 1600°C. Therefore, the fibers of McCullough, Jr. et al. will have some degree of non-galvanic corrosiveness.

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McCullough, Jr. et al fail to specifically teach the use of anisotropic pitch-based carbon fibers in the insulation material and the specific method of making the insulation material.

Otani et al. (US 4,504,455) teach carbonaceous pitch and the process for the preparation thereof. The carbonizing of the infusible fiber occurs at a temperature of 100-1300° C (col 6, ln 63-68). The pitch raw material is polycyclic polycondensed hydrocarbon (abstract). It would have been obvious to one having ordinary skill in the art to have used Otani's anisotropic pitch type carbonized fibers as the fibers in McCullough, Jr's fire resistant panel motivated by the desire to obtain a panel with increased strength and modulus.

Furthermore, although McCullough, Jr. et al. and Otani et al. do not explicitly teach the claimed galvanic current, tensile strength, compression recovery rate, thermal conductivity, and vertical incident acoustic absorptivity, it is reasonable to presume that these properties are inherent to McCullough, Jr's invention. Support for said presumption is found in the use of like materials, i.e. anisotropic pitch type carbonized fibers having the same fiber diameter bonded by a thermosetting resin and the use of like processes, i.e. carbonizing at a temperature between 550 to 800°C. The burden is upon Appellant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of galvanic current, tensile strength, compression recovery rate, thermal conductivity, and vertical incident acoustic absorptivity would have been present once the McCullough, Jr. et al. and Otani et al. product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

**(11) Response to Argument**

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Appellant argues that the claim limitation of an "average fiber diameter less than  $2\ \mu\text{m}$ " is not disclosed by McCullough, Jr. et al. This argument is not persuasive because "less than  $2\ \mu\text{m}$ " and a fiber diameter of  $2\ \mu\text{m}$  as disclosed by McCullough, Jr. et al. at column 4, line 20-28, are mathematically equivalent. Appellant's claims encompass values disclosed by McCullough, Jr. et al.

Appellant also argues that Otani et al. does not teach a carbon fiber with an average diameter being less than  $2\ \mu\text{m}$ . This argument is not persuasive because Otani et al. was not used for its teaching of fiber diameter, but for its disclosure of anisotropic pitch type carbonized fibers.

Appellant also argues that the motivation for the combination of Otani et al. and McCullough, Jr. et al., i.e. increased strength, is improper because there is no indication in McCullough, Jr. et al. that there is a need for increased strength and that there is no teaching in either reference to indicate that such a substitution would result in increased strength. This argument is not persuasive because a primary reference does not have to indicate its flaw before it is modified; there is no requirement that a reference teach how it can be improved before a prima facie case of obviousness can be established with a combination of another reference. Furthermore, Otani et al. disclose that anisotropic carbon fibers have superior mechanical properties (col 2, ln 11-13) such as strength and modulus (col 1, ln 23-26). Therefore, a substitution would result in a panel with increased strength.

Furthermore, Appellant argues that the bulk density limitation of claim 10 has not been met by McCullough, Jr. et al. This argument is not persuasive because claim 10 recites a bulk density of  $3\ \text{kg/m}^3$  to  $10\ \text{kg/m}^3$  and McCullough's bulk density ranges from  $6.4$  to  $96\ \text{kg/m}^3$ . Therefore, this limitation has been met.


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Finally, Appellant argues that the combination of the references do not suggest the claimed subject matter. This argument is not persuasive because as shown above, the combination of McCullough, Jr. et al. and Otani et al. result in the present invention. Furthermore, because the combination of McCullough, Jr. et al. and Otani et al. use the same materials in the same structure as Appellant's invention, the claimed properties of the present invention would have been met by this combination of references.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

UCR *UCR*  
December 6, 2001

  
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